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## Achieving Bronze

| Author     | Role                              | Version | Issue date    |
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### 1. Purpose

The purpose of this document is to provide guidance on answering the questions in the LEAF bronze award criteria. Each section of this document explains what should be considered when answering the questions. If any questions are not suitable for your area than 'Not applicable' along with an explanation can be written in the answer box. Any sustainable activities carried out in your area that are not captured by the framework can be captured in the 'Open Initiatives' section at the end of the questions.

### 2. Scope

This guide is for laboratory users who have been nominated to carry out LEAF in their area and are filling out the criteria for the bronze award.

### 3. Procedure

#### 3.1. Waste

- 1. The lab possesses required waste bins (possibly clinical, glass/sharps, hazardous etc.), as well as recycling/general waste bins with appropriate and clear signage. Standard operating procedures for the management of lab waste are available to all lab users who will have been made aware of the procedure to follow for correct waste disposal.**
  - Are there adequate waste bins in the laboratories such clinical, general, recycling? This will be specific to each laboratory area.
  - Signage should be present on bins and around the laboratory.
  - The lab should have a waste SOP available for all lab users.

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**New 1. Lab users disposing of hazardous/radioactive wastes have received specific training and records of this are kept. Training gives consideration to what to do in the event that it is discovered that hazardous/radioactive wastes have been incorrectly disposed of.**

- All lab users handling and disposing of hazardous waste should have specific training, training also includes what to do if waste is incorrectly disposed of. This can be included in the lab inductions however records must be kept of this training.

### **3.2. People**

**2. The lab has a mandatory sustainability induction procedure in place for all new arrivals, explaining the sustainable practices to take. The induction would benefit from being documented to allow users to revisit the training and refresh their knowledge.**

- Does the laboratory induction cover sustainability and sustainable practises that take place in the laboratories? specifically closing fume cupboards, turning equipment off, chemical/ sample management, and waste practices.
- The inductions should be available for lab members to use as a refresher.

**3. The lab has a system in place to clear or track materials left by departing staff. All lab users have been instructed on what to do with their materials when they depart.**

- Does the laboratory have a way to track material left by departing staff – can samples be destroyed or do they have to be kept. If they are being kept where are they stored and are box plans available so samples can be easily identified? Can chemicals/consumables be redistributed to other laboratory users?
- Ideally there should be an exit checklist that laboratory users complete before departure.

**4. The lab has either a nominated person or group to drive sustainability forward. They should all be lab members within the online LEAF platform. Sustainability has been added as a standing agenda item into lab and/or departmental meetings and/or relevant networks (e.g. Health & Safety)**

- Is there a nominated person or people driving sustainability and LEAF and is it discussed at Laboratory/departmental meetings?

**5. The lab (or relevant group) has taken part in 1 team activity of sorts over the course of the year, or one is imminently planned.**

- 1 or more activity has taken place over the past 12 months, or one is imminently planned.

**New 2. The lab has taken action to address the energy and environmental impacts of their lab operations under normal operating conditions, abnormal conditions e.g. small chemical spills that can be safely controlled locally, and emergency conditions e.g. large chemical spills that require external help. Existing documentation is updated as part of its review cycle to support this process.**

- Regular laboratory activities should have documentation in place as part of their risk assessment/standard operating procedure (SOP) documentation. This should include consideration to the energy and environmental impacts of the work both under normal operating conditions and in times when things don't go as expected.
- Focus on the main activities that are taking place in the space. So, under normal operating conditions, say you're using equipment that has a high power draw, is it being run optimally? If you're using a tissue culture facility with multiple hoods, are they all kept open all day or could their use be streamlined according to need? If under normal conditions your work involves microscopy with large image files, what are the energy costs associated with this activity and storage of the data, are there ways this could be reduced?
- Risk assessment/SOP renewal provides an opportunity for checking that the appropriate controls are in place. For example, a fume hood sash might be raised to deal with the fumes from a spill but how long does this run/does it need to run to clear the area of fumes to protect the environment. Ensuring the spill management procedure includes this type of information can help to reduce energy consumption whilst ensuring user and environmental protections are in place. Another example is if the activities could result in the release of greenhouse gases through evaporation of chemicals, this should be noted and is there a better way the emergency could be managed to avoid this?

### 3.3. Purchasing

**6. Energy and materials consumption have been considered during the purchase of new materials. Ideally users should request life-cycle assessments (LCAs), though should be prepared for vendors to not have these available. Lab users have received information or know where to find out how this should be approached.**

- Examples of when and how energy/water consumption, consumables, and durability have been considered in any recent purchases. If no purchases have been made users must know how to purchase sustainably when the time arises.
- This answer should consider everyday consumables too and can you move to more sustainable products.
- Applies only to equipment in which more efficient options are available which won't affect the equipment's output. E.g. freezers, safety cabinets, or drying cabinets.

### 3.4. Equipment

7. **There is a system in place to ensure that heat sources on cold storage equipment (fridges, -20 and ULT freezers) are not blocked, and any filters are cleaned regularly. Details of responsible person(s) for ensuring this is done are communicated to all lab users in a way that allows others to easily identify who they are.**
  - Heat sources on cold equipment are not blocked – fridges and freezers are well spaced and the filters and seals on ULT freezers are cleaned regularly.
  - Lab staff should be aware of who is responsible for the freezer and maintenance – a contact list on the outer door of fridges/freezers/ULT's should be present.
  
8. **There is a system in place to ensure that cold storage equipment (fridges, -20 and ULT freezers) and ovens are only operated when they are as full as possible. The need to do this and reason why has been communicated to all lab users either as part of their induction or as they start using the equipment.**
  - Ovens, incubators and other similar items of equipment are only operated when full, can items be consolidated into one? If they are empty can they be switched off?
  - This should be communicated to lab users as they start using the equipment.
  
9. **There is a system in place to ensure equipment and lights are turned off when they are not needed. Equipment this applies to is clearly marked and staff receive regular reminders to turn off the lights when they are not needed. Your response should include how you do this.**
  - Equipment and lights are turned off when not in use – sticker up. **Stickers are available from the laboratory sustainability officer ([jenna.lowe@liverpool.ac.uk](mailto:jenna.lowe@liverpool.ac.uk))**
  - Include signage on lights
  - How do you communicate this to lab users? This can include the use of stickers, posters, verbal reminders.

### 3.5. IT

10. **There is a system in place to ensure that computer monitor brightness settings and computer time-to-sleep have both been minimised. Where lab users are unsure of how to do this, competent staff (in local or through central IT departments) have been identified that can provide support.**
  - Has computer monitor brightness settings and time-to-sleep been minimised?
  - **This is pre-set by the university. Make sure it is set on standalone PC's.**
  - Check guidance for details on how to set this.

### 3.6. Sample and Chemical management

**11. All samples and chemical containers have legible labels, or there is a system in place to ensure that going forward all samples will be consistently labelled. The procedure for doing this has been communicated to all lab users and where possible, has been documented**

- All samples and chemicals have legible labels – **Samples and chemicals should be easily identifiable with the contents and the laboratory user.**
- How do you communicate this to all lab members?

**12. The lab has a system in place for sharing chemicals between users within the lab group. The procedure for identifying which resources can be shared has been communicated to all lab users. Your response should include the approach you use and how you tell people about it.**

- Chemicals can be shared between laboratory users – **ideally there should be a chemical inventory.**
- How do you communicate this to lab users?

### 3.7. Research quality

**13. Common protocols and methods are documented and stored on a shared facility to make them available to all lab staff. Their location and process for updating or adding new methods has been communicated to all lab members.**

- Common protocols are centrally shared and available to all laboratory members.
- How often are these updated and how are new protocols added?

**14. The lab has had its pipettes, scales, and any such equipment calibrated in the past year, or has them scheduled to be done. The procedure for doing this, including the person responsible for organising, the schedule and results (where necessary) are communicated to all lab users. Your response should include the method you use to do this.**

- Pipettes, balances and other equipment is calibrated.
- Are lab members aware of how to access these services?

### 3.8. Ventilation

**15. There is a system in place to ensure that any issues that Estates must address have been reported. This includes ventilation, room pressure, water leaks, heating & cooling, etc. This may include a nominated person(s) to whom faults are reported locally and who is responsible for alerting Estates or a central system for everyone to report on.**

- Any building issues are reported to estates.
- Who is responsible for this?



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**16. Fume cupboards and safety cabinets possess signage encouraging good practice. Where local exhaust systems are present instead, equivalent measures are taken to promote good energy management.**

- Fume cupboards and safety cabinets have signage encouraging good practise. **Signage available from [LEAF website](#).**

#### **4. Changes to the procedure**

| <b>Version</b> | <b>Reason for change</b>                 | <b>Date</b>   |
|----------------|--|---------------|
| 1.0            |  | November 2023 |
| 2.0            | Change to purpose, scope and section 3.4 | January 2024  |
| 3.0            | Change to section 3 for criteria update  | November 2024 |